Appl. No. 09/838,678
Amdt. dated August 19, 2004
Reply to Office Action of March 25, 2004

PATENT

REMARKS/ARGUMENTS

Replacement drawings have been submitted as required by the Examiner.

The Specification has been reviewed. No specific changes appear necessary.

Claim 1 stands rejected under 35 USC § 102(b) over Klauser (Oct 1998). Klauser has been cited for teaching a computing device that provides hardware conversion of flow control predicates associated with program instructions executable within the computing device, including predicate assignment means and predicate use means, paraphrasing claim 1.

The Applicant respectfully traverses the rejection. Klauser asserts that it has "hardware", conversion, but closer inspection reveals that it requires compiler-based profiling or "transformations" in order to function. It is thus inferable that it modifies the input instructions (page 1, last paragraph: "we assume the conditional branch starting a predictable hammock ... would be marked by a compiler or binary instrumentation tool."). In other words, the compiler must modify the original instruction set in order for the Klauser technique to work. This feature severely limits the generality of the conversion. In fact, further investigation shows that the Klauser method requires compiler support. The present invention is intentionally without compiler support. This distinction is now emphasized in amendment to claim 1 and a newly added corresponding method claim 5 wherein it is now recited that the function is invisible to instruction set architecture and thereby is invisible to a user. This language is supported by the description at page 6 at the paragraph beginning at line 6. This is a limitation which clearly removes any reliance on modification or use of compiler-related instructions.

Still further, the Klauser art is restricted to "simple" hammocks, i.e., unnested branches with no internal branches, and like structures). By contrast, the present invention teaches a completely general technique, not limited to special cases. To emphasize this distinction, new claims 4 and 8 have been added. The generality of this technique is made possible by the use of canceling predicates, as now recited in claims 3 and 7. It is therefore submitted that Klauser teaches away from the present invention..

To further emphasize distinctions, claims 2 and 6 have been added. These claims recite structure differences and the employment of a tracking buffer to make predicate

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assignments. This structure is supported in the depiction of Figure 2 and its associated description.

The references cited of interest are instructive in that they too fail to suggest the present invention. Kahle requires changing the opcodes of the instructions. The present invention has no such requirement. The earlier priority date of the present invention is also noted by the Examiner.

Terada involves tuning the underlying realization of a VLIW machine. It also requires a compiler to generate predicated instructions. In our work, unmodified code is used: any conversion(s) necessary are done "under the hood". Predicates do not appear in the instruction words.

The differences between the prior art and the present work are fundamental and not based on slight changes in details.

CONCLUSION

In view of the foregoing, Applicant believes all claims now pending in this Application are in condition for allowance. The issuance of a formal Notice of Allowance at an early date is respectfully requested.

If the Examiner believes a telephone conference would expedite prosecution of this application, please telephone the undersigned at 650-326-2400.

Respectfully submitted,

Kenneth R. Allen
Reg. No. 27,301

TOWNSEND and TOWNSEND and CREW LLP
Two Embarcadero Center, Eighth Floor
San Francisco, California 94111-3834
Tel: (650) 326-2400
Fax: (650) 326-2422
Attachments
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